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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,671	10/22/2001	James L. Jason JR.	10559/502001/P11794	2397

20985 7590 09/01/2005

FISH & RICHARDSON, PC
12390 EL CAMINO REAL
SAN DIEGO, CA 92130-2081

EXAMINER	
KHUONG, LEE T	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/045,671	JASON, JAMES L.	
	Examiner	Art Unit	
	Lee Khuong	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Block et al. (US 6,934,768) hereinafter referred as Block.

Regarding claim 1, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising:

sending a data packet configured based on a maximum packet size along a path from a first network point (NODE S, Fig. 8, ***a source node***) to a second network point (NODE T, Fig. 8, ***a target node***, see col. 10, lines 27-36, ***the source node sends a message M1 using the previous, or current, MTU value stored by that node***);

along the path, generating fragment packets from the data packet (see col. 10, lines 34-36);

analyzing the size of at least one of the fragment packets relative to a predetermined maximum packet size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9); and

depending on a result of the analysis, re-setting a maximum packet size based on the size of one of the fragment packets (see col. 10, line 62 – col. 11, line 18, ***updating the MTU size of the source node and the fragment size of the source node is changed accordingly with the new MTU***).

Regarding claim 2, Block teaches all limitations set forth in the rejection of claim 1. Block further teaches re-setting the maximum packet size equal to the size of one of the fragment packets (step T6, Fig. 8, see col. 11, lines 7-18).

Regarding claim 3, Block teaches all limitations set forth in the rejection of claim 1. Block further teaches communicating the new maximum packet size to the first network point (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 4, Block teaches all limitations set forth in the rejection of claim 1. Block further teaches communicating the new maximum packet size from the second network point (see col. 10, lines 1-26, lines 37-61 and col. 11, lines 7-9, ***upon receipt of each MTU change ACK message in a target node, an ACK message is returned to the source node S***).

Regarding claim 5, Block teaches all limitations set forth in the rejection of claim 3. Block further teaches refraining from communicating the new maximum packet size unless the maximum packet size of the path has changed (see col. 11, lines 11-18).

Regarding claim 6, Block teaches all limitations set forth in the rejection of claim 1. Block further teaches storing the maximum packet size (see col. 11, line 16).

Regarding claim 7, Block teaches all limitations set forth in the rejection of claim 1. Block inherently teaches refraining from changing the maximum packet size if the fragment analyzed comprises the final fragment of the data packet {see also **Struhsaker et al.** (US 6,144,645) (col. 16, lines 48-54, ***it is well known that the last fragment of a data packet includes a bit that indicates the final fragment of the data packet and the final fragment is not necessarily of maximum length of the MTU***)}.

Regarding claim 8, Block teaches all limitations set forth in the rejection of claim 1. Block further teaches in which the data packet that is sent along the path is of the largest size allowed by the network technology at the first point (see col. 10, lines 27-36).

Regarding claim 10, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising: determining, at a receiving point (NODE T, Fig. 8, ***a target node***), a maximum data packet size of a network path from a sending point (NODE S, Fig. 8, ***a source node***) to the receiving point (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 11, Block teaches all limitations set forth in the rejection of claim 10. Block further teaches communicating the maximum data packet size to the sending point (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 12, Block teaches all limitations set forth in the rejection of claim 11. Block further teaches sending a message of the size of the maximum data packet size from the sending point to the receiving point (see col. 11, lines 7-18).

Regarding claim 13, Block teaches all limitations set forth in the rejection of claim 10. Block further teaches the determining of the maximum packet size includes: storing a predetermined maximum packet size (see col. 10, lines 32-36); sending a data packet from the sending point to the receiving point (see col. 10, lines 27-36); and comparing the size of the data packet to the predetermined maximum packet size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 14, Block teaches all limitations set forth in the rejection of claim 13. Block further teaches, depending on the result of the comparison, re-setting the maximum packet size depending on the size of the data packet (see col. 10, line 62 – col. 11, line 18, ***updating the MTU size of the source node and the fragment size of the source node is changed accordingly with the new MTU***).

Regarding claim 15, Block teaches all limitations set forth in the rejection of claim 14. Block further teaches, depending on the result of the comparison, re-setting the maximum packet size equal to the size of the data packet (see col. 10, line 62 – col. 11, line 18, ***updating the MTU size of the source node and the fragment size of the source node is changed accordingly with the new MTU***).

Regarding claim 16, Block teaches all limitations set forth in the rejection of claim 10. Block further teaches also including reporting the maximum packet size to a sending point (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 17, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising:

sending a data message that is configured based on a maximum packet size along a network path from a sending point (NODE S, Fig. 8, ***a source node***) to a receiving point (NODE T, Fig. 8, ***a target node***, see col. 10, lines 27-36);

determining the size of the data message at the receiving point (see col. 10, lines 1-26, lines 37-61 and col. 11, lines 7-9); and

based on the determination, adjusting a maximum packet size between sending and receiving points (see col. 10, line 62 - col. 11, line 18, ***updating the MTU size of the source node and the fragment size of the source node is changed accordingly with the new MTU***).

Regarding claim 18, Block teaches all limitations set forth in the rejection of claim 17. Block further teaches fragmenting the data message if its size exceeds a maximum packet size (see col. 10, lines 1-8 and lines 27-36);

determining the size of the largest fragment (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9); and

optimizing communication based on the determination (see col. 4, lines 44-47 and col. 11, lines 11-18; ***optimally updating a MTU sized of the source node***).

Regarding claim 20, Block teaches all limitations set forth in the rejection of claim 19. Block further teaches the test message is larger than the maximum packet size (see col. 10, lines 1-8, lines 27-36 and col. 11, lines 7-18).

Regarding claim 21, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising: determining the maximum packet size of a network path by sending a single data packet along the network path (see col. 10, lines 27-36).

Regarding claim 22, Block teaches all limitations set forth in the rejection of claim 21. Block further teaches in which the single data packet is larger than the maximum packet size (see col. 10, lines 1-8, lines 27-36 and col. 11, lines 7-18).

Regarding claim 23, Block teaches all limitations set forth in the rejection of claim 21. Block further teaches also including fragmenting the packet into fragments (see col. 10, lines 1-8, lines 27-36 and col. 11, lines 7-18).

Regarding claim 24, Block teaches all limitations set forth in the rejection of claim 21. Block further teaches comparing the size of a fragment to a predetermined maximum packet size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 25, Block teaches all limitations set forth in the rejection of claim 21. Block further teaches sending the maximum packet size to a sending point on the network path (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 26, Block teaches all limitations set forth in the rejection of claim 25. Block further teaches generating packets at the sending point, the packets at least as small as the maximum packet size (see col. 10, lines 1-8 and col. 11, lines 11-18).

Regarding claim 27, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising:

sending a data packet on a path from a first network point to a second network point (see col. 10, lines 27-36, ***sending M1 message from a source node S to a target node T in Fig. 8***);

along the path, generating fragment packets from the data packet (see col. 10, lines 34-36, ***at step S1, the source node sends one or more fragments of message M1 using the previous, or current MTU value stored for that node***); and

analyzing at least one of the fragment packets to determine a path maximum packet size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 28, Block teaches all limitations set forth in the rejection of claim 27. Block further teaches comparing the size of the fragment to a predetermined maximum packet size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 29, Block teaches all limitations set forth in the rejection of claim 28. Block further teaches resetting the predetermined maximum packet size to equal the size of the fragment (step T6, Fig. 8, see col. 11, lines 7-18).

Regarding claim 30, Block teaches all limitations set forth in the rejection of claim 27. Block further teaches, based on the comparison, choosing an optimal packet size for packets sending packets from the first to the second network points (see col. 4, lines 44-47 and col. 11, lines 11-18, ***optimally updating a MTU sized of the source node***).

Regarding claim 31, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising:

determining a maximum packet size of a network path (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9); and

communicating the maximum packet size from a first point on the path to a second point on the path (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 32, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising:

sending a data packet along a network path, the data packet being larger than the maximum packet size of the network path (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9);

separating the packet into fragments (see col. 10, lines 34-36); and

analyzing the size of the fragments to determine the maximum packet size of the path (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 33, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block's method comprising:

sending a message along a network path (see col. 10, lines 1-16, lines 37-61, and col. 11, lines 7-9), the path including sections (section 1 with LAN 4, Fig. 1 and section 2 with LAN 6, Fig. 1; wherein section 1 is equivalent to a source node S, Fig. 8 and section 2 is equivalent to a target node T, Fig. 8), each of the sections having a maximum message size limiting the size of

messages passing through it (see col. 10, lines 1-8 and lines 27-36, ***a message M1 is sent using previous, or current, MTU value that was stored on the source node***), the message being larger than the smallest maximum message size of the sections (see col. 10, lines 1-8 and lines 27-36);

fragmenting the message into fragments, the fragments being at least as small as the smallest maximum message size (see col. 10, lines 34-36); and

at a receiving point, measuring the size of the largest fragment (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 34, Block teaches all limitations set forth in the rejection of claim 33. Block further teaches communicating the size of the largest fragment to a sending point (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 35, Block teaches all limitations set forth in the rejection of claim 34. Block further teaches comparing the size of the largest fragment to a pre-determined maximum message size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9).

Regarding claim 36, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block' system comprising: a computer program embodied in a computer readable medium (see col. 5, line 63 – col. 6, line 23), the program capable of configuring a computer to:

send a data packet along a path from a first network point to a second network point (see col. 10, lines 27-36, ***sending M1 message from a source node S to a target node T in Fig. 8***);

along the path, generate fragment packets from the data packet (see col. 10, lines 34-36, ***at step S1, the source node sends one or more fragments of message M1 using the previous, or current MTU value stored for that node***);

analyze the size of at least one of the fragment packets relative to a predetermined maximum packet size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9); and

depending on a result of the analysis, re-set a maximum packet size based on the size of one of the fragment packets (see col. 10, line 62 – col. 11, line 18, ***updating the MTU size of the source node and the fragment size of the source node is changed accordingly with the new MTU***).

Regarding claim 37, Block teaches all limitations set forth in the rejection of claim 36. Block's computer system is also capable of configuring a computer to communicate the new maximum packet size to the first network point (see col. 5, line 63 – col. 6, line 23).

Regarding claims 38 and 40, Block teaches A Method and System of Dynamic Modification Of Fragmentation size cluster Communication Parameter In Clustered Computer System. Block' system comprising: a computer program ***is inherently*** embodied in a carrier wave {see also Mulligan (US 6,212,190) (col. 5, lines 26-44) ***for evidence of the signals carried through computer network carry the digital data to and from source node, are exemplary forms of carrier waves transporting the information***), the program capable of configuring a computer and a medium bearing intelligence configured to enable a machine to effect actions (see col. 5, line 63 – col. 6, line 23) to:

send a data packet along a path from a first network point to a second network point (see col. 10, lines 27-36, ***sending M1 message from a source node S to a target node T in Fig. 8***);

along the path, generate fragment packets from the data packet (see col. 10, lines 34-36, ***at step S1, the source node sends one or more fragments of message M1 using the previous, or current MTU value stored for that node***);

analyze the size of at least one of the fragment packets relative to a predetermined maximum packet size (see col. 10, lines 1-26, lines 37-61, and col. 11, lines 7-9); and

depending on a result of the analysis, re-set a maximum packet size based on the size of one of the fragment packets (see col. 10, line 62 – col. 11, line 18, ***updating the MTU size of the source node and the fragment size of the source node is changed accordingly with the new MTU***).

Regarding claim 39, Block teaches all limitations set forth in the rejection of claim 38. Block's computer system is also capable of configuring a computer to communicate the new maximum packet size to the first network point (see col. 5, line 63 – col. 6, line 23).

DETAILED ACTION

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Block in view of Mulligan (US 6,212,190).

Regarding claim 9, Block teaches all limitations set forth in the rejection of claim 8.

Block does not expressly teach periodically repeating the sending, generating, analyzing, and resetting.

Mulligan teaches dynamically discovering a Path MTU (PMTU) between a source node and target node at a predetermined time interval (see col. 8, lines 46–52).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ the Path MTU Discovery as taught by Mulligan into Block to arrive the claimed invention as specified in claim 8.

The suggestion/motivation for doing so would have been to improve network bandwidth and performance by reducing fragmentation (see col. 8, lines 37-39).

Regarding claim 19, Block teaches all limitations set forth in the rejection of claim 18. Block teaches sending a test data message (see col. 10, lines 27-36, ***the source node sends a message M1 using the previous, or current, MTU value stored by that node***).

Block does not expressly teach periodically sending a test data message.

Mulligan teaches dynamically discovering a Path MTU (PMTU) between a source node and target node at a predetermined time interval/**periodically** (see col. 8, lines 46–52).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ the Path MTU Discovery as taught by Mulligan into Block to arrive the claimed invention as specified in claim 8.

The suggestion/motivation for doing so would have been to improve network bandwidth and performance by reducing fragmentation (see col. 8, lines 37-39).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Badt et al. (US 5,892,753) ; Schroeder et al. (US 6,327,626); Valencia (US 6,650,652) are cited to show a method and system of Determining Packet Size In Networking.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lee T. Khuong
Examiner
Art Unit 2665

ALPUS H. HSU
PRIMARY EXAMINER